AMENDMENTS

In The Specification:

Please amend the below passages of the specification to read as follows. The changes to the below passages of the specification are detailed in the attached Appendix.

Page 3, lines 13-20:

a1

US 4,988,742 deals with a PSA terpolymer comprising a) from 60-95 parts of a photopolymerized polymer of monomers containing i) 60-96 parts alkyl acrylate, ii) 2 to 15 parts of a strongly polar copolymerizable monomer, iii) 2 to 25 parts of a strongly polar and moderately polar monomer, b) 40 to 5 parts of hydrogenated rosin ester tackifier and c) 0.01 to 1 parts of a photoinitiator. These tackified polymers are alleged to have lower Tg than polymers of the same composition without tackifier. These polymers are alleged to have significantly higher shear and adhesion to lower energy substrates.

Page 4, line 22 to page 5, line 2:

a2

The pressure sensitive adhesives provide improved removability of the laminate from the substrate even after aging for extended time periods. The cohesive integrity of the laminate is reflected in the ability to peel it off cleanly from the substrate. Superior performance requires the presence of both acid and nitrogen containing monomers. In one embodiment, superior performance is obtained with additionally using the appropriate cast vinyl facestock.

Page 5, lines 13-26:

a3

As described above the present invention relates to adhesives, adhesive blends and laminates prepared therefrom. One aspect of the present invention provides a laminate that can be hand applied to sides of vehicles that often contain uneven surfaces like rivets, corrugations, etc. The adhesives are co-polymers of an acrylate or methacrylate ester, a nitrogen containing monomer, an unsaturated carboxylic acid, and optionally a monomer containing at least one cross-linkable site. The polymers generally have a glass transition temperature of less than about 10°C, or preferably less than about -0°C, or most preferably less than about -15°C. The polymers typically have a weight average molecular weight of at least about 200,000, preferably from about 200,000 to about 700,000. Here and elsewehere in the specification and claims the range and ratio limits may be combined. The weight average molecular weight was determined by size exclusion chromatography using polystyrene for calibration.

Page 17, lines 10-20:

a4

The pressure sensitive adhesive may also contain a compatible tackifier. Tackifiers, are generally hydrocarbon resins, wood resins, rosins, rosin derivatives, and the like, which when present in concentrations ranging from about 5 to about 50 by weight of the total adhesive composition, more preferably from about 10 to about 20 by weight, impart pressure-sensitive adhesive characteristics to the elastomeric polymer adhesive formulation. It is contemplated that any tackifier known by those of skill in the art to be compatible with elastomeric polymer compositions may be used with the present

a4 cont

embodiment of the invention. Examples of useful tackifiers include Foral 85 & Hercolyn-D (rosin esters available from Hercules), Nirez 2019 (terpene phenolic resin available from Arizona Chemical), etc.

Page 20, lines 1-22:

a5

The release liner is adhered to opposite surface of the pressure sensitive adhesive layer allowing for separating with optimum effort to expose the adhesive surface prior to application on a desired substrate. The low energy release is typically obtained using the appropriate polydimethylsilicone polymer coating available from either solvent based or solventless silicone coating that could be polymerized on the web using a variety of curing techniques including UV, thermal often catalyzed by metals like tin, platinum, etc. Other desirable properties like adhesive repositionability and/or air egress may also be obtained by modifying the release surface. For example, roughening the release surface as taught by Mel Freedman (US 4,713,273) helps avoid problems of air entrapment during application of laminates to substrates. This patent is incorporated by reference. The facestock may also have a tie layer between the pressure sensitive adhesive and the facestock. One useful tie layer is polyamides such as Platamid available from Elf Atochem. In one embodiment, the facestock is any vinyl facestock used for signage, such as a polyvinylhalide polymers, which include polyvinyl chloride and polyvinylidene fluoride. These layers may have additives to improve their performance such as plasticizers, antioxidants and UV radiation absorbers. The pressure sensitive adhesive is also releasably adhered to a release liner such as a silicone liner. In one embodiment, the vinyl film

has plasticizers. The vinyl film may also be composed of vinyl chloride copolymerized with acrylate, acrylic acid or blended with other polymers including polyurethane, rubber, etc.

Page 20, line 23 to page 21, line 11:

The adhesives are covalently cross linked by the action of the cross linkable monomer during polymerization. In one embodiment, the adhesives cross-linked during post curing of the adhesive after coating. This can be achieved via heat, actinic, electron beam radiation or metal based ionic cross-linking between groups like carboxy, hydroxyl, etc; and/or catalysts that induce reaction between functional groups such as epoxy, carboxy, hydroxy, amino, etc., and/or multifunctional additives such as di-isocyanates, etc. The cross linking agents include aluminum acetylacetonate (AAA), a polyamine, such ethylenepolyamines which include ethylenediamine, diethlyenentriamine (DETA), triethylenediamine (TEDA), tetraethylenepentamine (TEPA), multivalent metal complexes, such as titanium esters (for example Tyzor available from Du Pont), etc. These materials are usually added to the adhesive in solution with a chemical concentration of about 3% to about 15%, or from about 5% to about 10% weight. The crosslinking agent is typically used at a level from about 0.05% to about 1%, or from about 0.075% to about 0.75%, or from about 0.1% to about 0.5% by weight.

Page 22, lines 3 to 22:

Samples of the above adhesives were tested for rivet performance. Test laminate samples (prepared as described in the previous paragraph) approximately 3 x 6 inches in dimension are applied over test panels

painted with white, glossy, polyester paint (Polar White) and specially riveted with aluminum rivets. Application is done so as to minimize forming any wrinkles especially around these rivet heads, e.g. Brazier rivet heads, 0.45" (diameter) X 0.13" (height) X 0.3" (shaft diameter). Entrapped air is released with the use of pin pricks while a brush with hard bristles and plastic squeegee is used to get the best conformation of the film around the rivet. After 2 days, the panels are placed under a microscope (Olympus SZH zoom stereo microscope using 0.5x objective), an image is captured using a Pulnex CCD camera, and the image is analyzed using Image Pro Plus (version 3.0, Media Cybernetics, Silver Spring, Maryland) software. This allowed for quantifying the tenting of the vinyl films around the test panel rivets accurately. The tent area is defined as the difference between the area enclosed by the two contact perimeters measured in the vicinity of the rivet head perimeter where the vinyl breaks contact with the rivet and the perimeter where the vinyl regains contact with the surrounding flat substrate.

Page 22, line 23 to page 23, line 2:

Fig. 2 shows how higher levels of NVP help retain good Rivet performance even after thermal aging. The alkyl acrylate fractions were adjusted to accommodate the changing levels of NVP within these polymer compositions. The level of acid and crosslinker was kept the same in all these compositions. The control test sample containing 2% NVP has been described US Patent No. 4,812,541, issued to Mallya et al. and is commercially available from Avery Dennison as Polytex 7000 adhesive.

Page 23, lines 11-12:

Q9

[a]Peels were measured at room temperature using 12 inches/minute cross head speed after 12 minute dwell on stainless steel panels.

Page 23, line 17 to page 24, line 4:

Q10

The high shears measured with Example F adhesive reflects the high cohesive strength of these high NVP containing polymers. The high shear observed reflects the increased cohesive strength which, in turn, is believed to be instrumental towards imparting good long term removability performance. Unexpectedly, this is obtained without compromising the peel adhesion properties.

Page 25, lines 7-9:

Q11

The initial and aged rivet performance have been listed in Table 3. 3M's Controltac 180-10 Plus™ is a competitive product which is provided as a comparison.

In The Claims:

Please amend claims 1, 4, 8, 9, 11, 13, 14, 16, 18, 22, 25, 30, 33, 36, 37, 38, 39, 41 and 42 to read as shown below. The amendments to claims 1, 4, 8, 9, 11, 13, 14, 16, 18, 22, 25, 30, 33, 36, 37, 38, 39, 41 and 42 are detailed in the attached Appendix.

Q12

1. (Amended) A pressure sensitive adhesive comprising a copolymer which comprises: (a) a major amount of at least one acrylate or methacrylate ester; (b) from about 8% to about 30% by weight of at least one nitrogen containing monomer; (c) from about 0.5% to about 15% by weight of at least one unsaturated carboxylic acid; and (d) at least one cross linkable monomer.